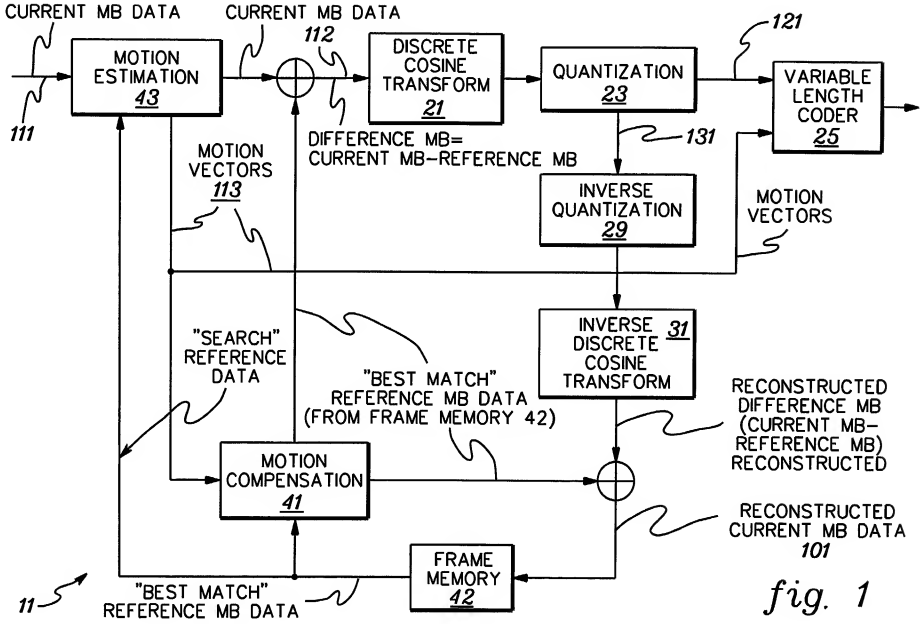

CURRENT MB DATA
CURRENT MB DATA
112
121
MOTION ESTIMATION 43
DISCRETE COSINE TRANSFORM 21
QUANTIZATION 23
VARIABLE LENGTH CODER 25
111
DIFFERENCE MB= CURRENT MB–REFERENCE MB
131
MOTION VECTORS 113
INVERSE QUANTIZATION 29
MOTION VECTORS
INVERSE DISCRETE COSINE TRANSFORM 31
"SEARCH" REFERENCE DATA
"BEST MATCH" REFERENCE MB DATA (FROM FRAME MEMORY 42)
RECONSTRUCTED DIFFERENCE MB (CURRENT MB–REFERENCE MB) RECONSTRUCTED
MOTION COMPENSATION 41
RECONSTRUCTED CURRENT MB DATA 101
FRAME MEMORY 42
11
"BEST MATCH" REFERENCE MB DATA

fig. 1

EP0622967A2

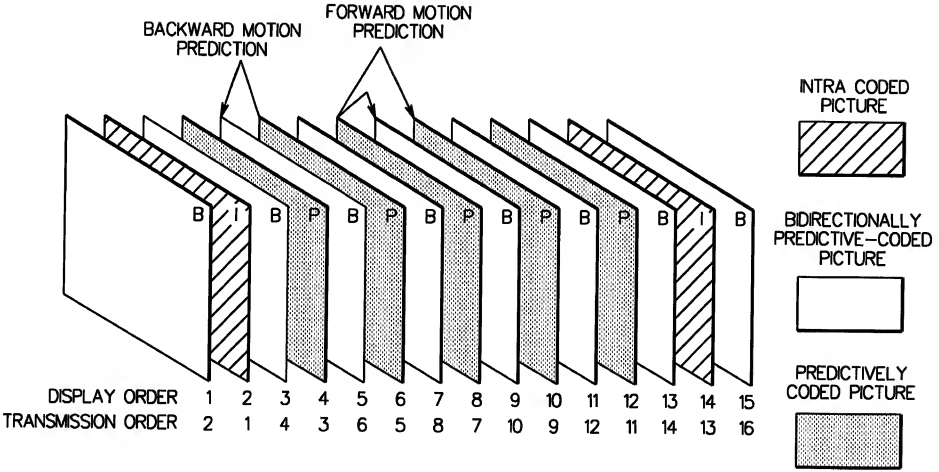


fig. 2

END920010083

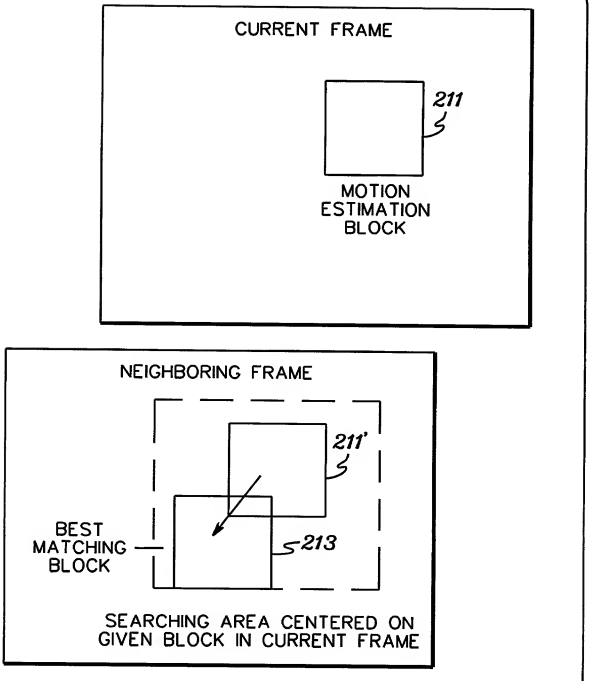
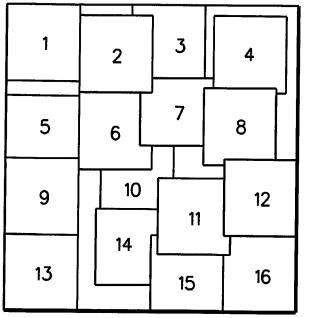
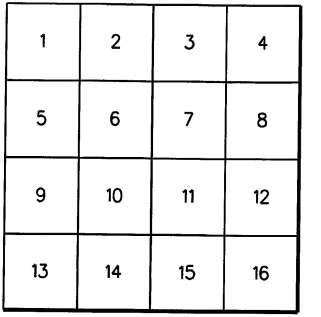

CURRENT FRAME
211
MOTION ESTIMATION BLOCK
NEIGHBORING FRAME
211'
213
BEST MATCHING BLOCK
SEARCHING AREA CENTERED ON GIVEN BLOCK IN CURRENT FRAME

fig. 3

AMENDED SHEET



BLOCKS OF PREVIOUS PICTURE
USED TO PREDICT CURRENT PICTURE



CURRENT PICTURE AFTER USING
MOTION VECTORS TO ADJUST
PREVIOUS PICTURE BLOCK POSITIONS

fig. 4

SUBSTITUTE SHEET

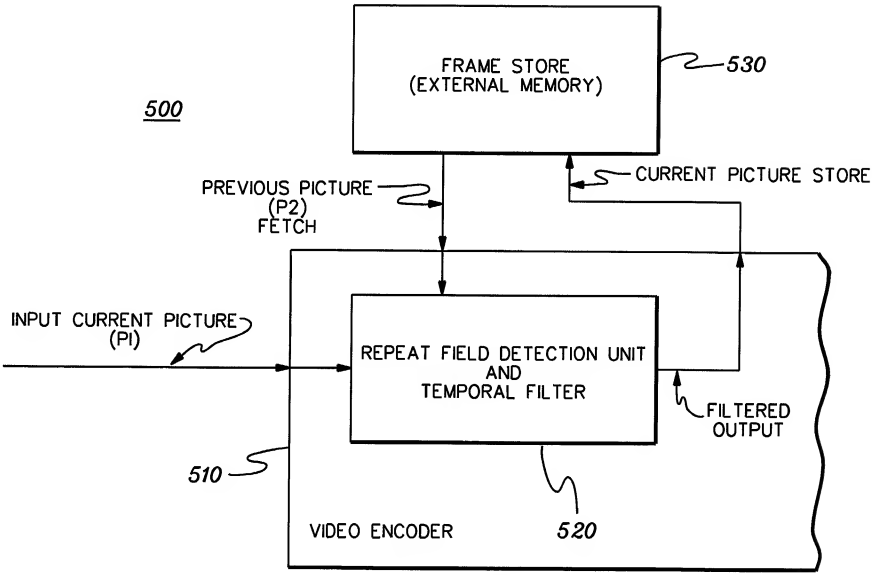


fig. 5

END920010083

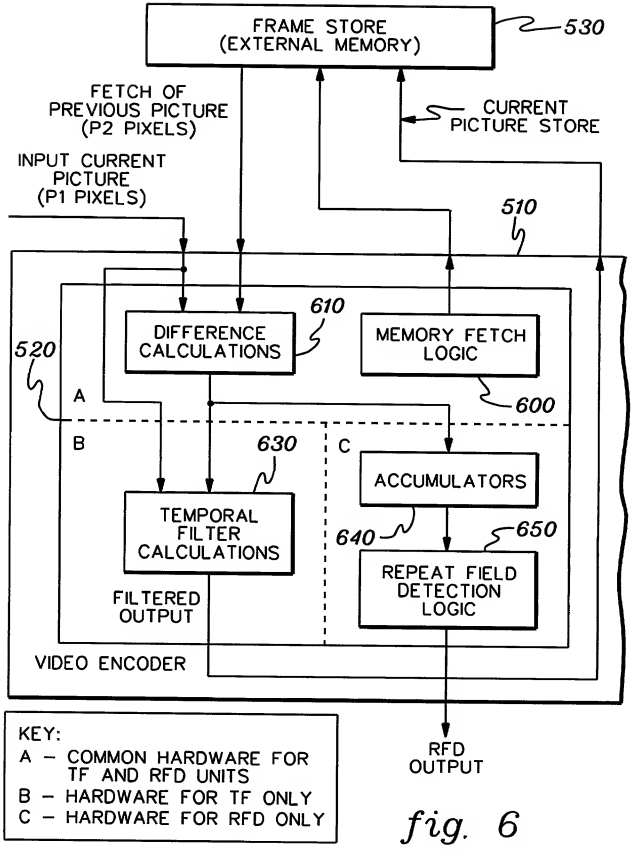

FRAME STORE
(EXTERNAL MEMORY)
530
FETCH OF
PREVIOUS PICTURE
(P2 PIXELS)
CURRENT
PICTURE STORE
INPUT CURRENT
PICTURE
(P1 PIXELS)
510
610
DIFFERENCE
CALCULATIONS
MEMORY FETCH
LOGIC
520
A
600
B
630
C
ACCUMULATORS
TEMPORAL
FILTER
CALCULATIONS
640
650
REPEAT FIELD
DETECTION
LOGIC
FILTERED
OUTPUT
VIDEO ENCODER
RFD
OUTPUT
KEY:
A – COMMON HARDWARE FOR
TF AND RFD UNITS
B – HARDWARE FOR TF ONLY
C – HARDWARE FOR RFD ONLY

fig. 6

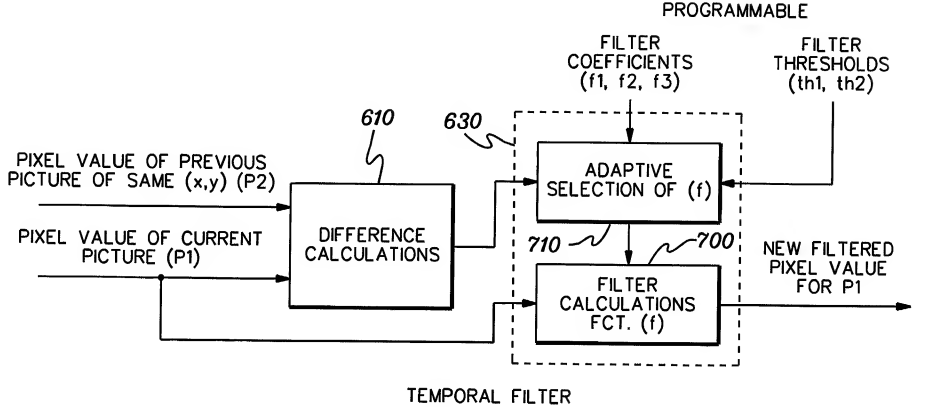

PROGRAMMABLE
FILTER COEFFICIENTS (f1, f2, f3)
FILTER THRESHOLDS (th1, th2)
610
630
PIXEL VALUE OF PREVIOUS PICTURE OF SAME (x,y) (P2)
PIXEL VALUE OF CURRENT PICTURE (P1)
DIFFERENCE CALCULATIONS
ADAPTIVE SELECTION OF (f)
710
700
FILTER CALCULATIONS FCT. (f)
NEW FILTERED PIXEL VALUE FOR P1
TEMPORAL FILTER

fig. 7

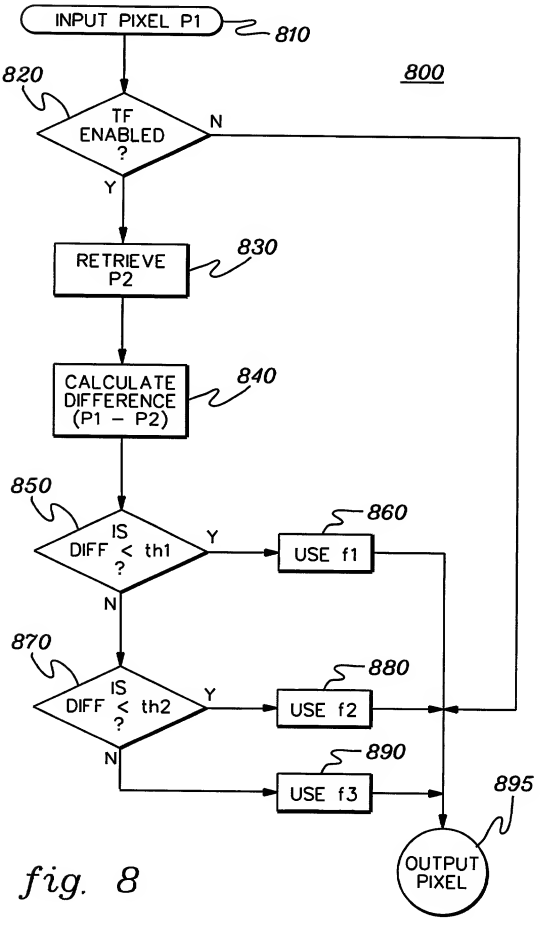

INPUT PIXEL P1
810
800
820
TF ENABLED ?
N
Y
RETRIEVE P2
830
CALCULATE DIFFERENCE (P1 – P2)
840
850
IS DIFF < th1 ?
Y
860
USE f1
N
870
IS DIFF < th2 ?
Y
880
USE f2
N
890
USE f3
895
OUTPUT PIXEL

fig. 8